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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Written Comments on Proposed Rulemaking
IDEM's CAFO regulation as Draft Rule 327 IAC 19

The following comments are submitted by Kathy J. Martin of Martin Environmental Services. Ms. Martin has reviewed over 40 CAFO permit applications submitted to IDEM since 2004 and is familiar with typical technical and administrative deficiencies of CFO permit applications for hog, dairy, and poultry facilities. Please consider these comments with that expertise in mind. Overall, the proposed rule reflects a greater depth of understanding of the importance of safely managing large volumes of manure. The following comments serve to fine tune key parts of the proposed rule and in some instances pose questions to IDEM that could be answered with clarification in the rule language.

1. 327 IAC 19-3-1 (e) manure staging – IDEM should take this opportunity in rule-making to establish a registration process for out-of-state transport of manure and other CAFO waste products before those pollutants are stored or staged on land prior to disposal by land application. Registration could be a simple form that identifies where the manure came from, the volume to be stored/staged, the person(s) responsible for the waste when it enters Indiana with contact info, and the location of final disposal.

2. 327 IAC 19-4-1 (c) additional design standards to protect human health and the environment – if IDEM has required additional design standards in the past – those standards should be incorporated into the regulations with action triggers so that both industry and public understand what options have/can be used to further protect human health and environment.

3. 327 IAC 19-6-1 (a) compliance with state laws – a better and more inclusive list should be used, such as "compliance with all applicable state, local, and federal laws".

4. 327 IAC 19-7-5 Manure management plan – The prior use of this term in CFO regulations is highly misleading and should be called a Sampling and Analysis Plan – which is what it is. Here the term is used to include the past concept of manure and soil testing information with maps and land use agreements, among other items. If IDEM is trying to create a Nutrient Management Plan rule that meets the requirements of NPDES – then this older term should not be used in this new rule. Just call the group of required items the Nutrient Management Plan and be done with it. Stop the confusion.

5. 327 IAC 19-7-1 (c)(11) fees – IDEM should have a higher fee associated with CAFO permit applications in order to generate additional monies for compliance and enforcement of those permits. Several States use a sliding scale that causes an increase in fee based on animal numbers – this puts a higher fee on the largest facilities which generate the most pollution.

6. 327 IAC 19-7-2 (a)(2) map of wells – This provision should require the applicant to map all wells, public and private within 1000 feet of the proposed manure storage facilities. The location of irrigation wells, private water supply wells and even

abandoned water wells is important in assessing how the proposed facility will impact the local water supply system (ie., the environment).

7. 327 IAC 19-7-2 (a)(1) soil survey map – IDEM needs to consider the legibility of soil maps submitted in the permit application with respect to ability to scan into the virtual file cabinet and whether or not the printed version from the VFC is legible. In addition, IDEM must consider how well the maps convey information during photocopying. This has been a problem in the past with respect to overlays on aerial photos being completely illegible not only when viewing on the VFC, but especially when printed.

8. 327 IAC 19-7-3 (g) farmstead plan drawing size – IDEM needs to consider the legibility of all details on the farmstead plan drawing when scanned into the VFC and subsequently printed as an 81/2 by 11 map. Currently, the system does not readily convey small font type into a readable printed map. It may be better in the long run to require all map details to be reproduced on a separate sheet of paper with map indicators (ie., A, B, C) so that the map details are preserved for public review.

9. 327 IAC 19-7-6 Mortality Management – IDEM should prohibit on-site burial of CAFO mortalities and should encourage the use of rendering or on-site composting as the primary disposal mechanism. The Mortality management plan should include an estimate of the expected mortality rate for both normal and acute episodes. This rule should contain more details on the minimum requirements for constructing a compost facility, such as published technical guidance on C:N ratios, use of sawdust and other carbon sources, minimum heat for achieving compost, and final disposition of composted animals through the Nutrient Management Plan. This rule should have stricter requirements for disposal of particularly diseased animals. The word "rendering" isn't even in this part of the Rule and yet, rendering is the best alternative for disposal. This Section should specify that compost facilities must be roofed and have sidings on at least three sides of the structure to prevent stormwater blow-in and to enhance the temperature mechanisms of the compost design.

10. 327 IAC 19-8-1 "....revoked, and reissued, or revoked...." – the extra comma should be removed so that it reads as "....revoked and reissued, or revoked...."

11. 327 IAC 19-8-2 submittal of permit renewal application – This section only provides 30 days for IDEM to review the permit renewal application before the permit expires. That does not seem like enough time for limited staff to do a thorough review of the compliance of the facility during the prior five years with respect to all records that are maintained on-site and not provided to the department. This time frame should be at least 60 days prior to permit expiration.

12. 327 IAC 19-8-2 (c) permit renewal application contents – The permittee should submit a list of all spills that occurred in the five year permit period and provide a narrative of why the spills occurred, what was done on the site to remediate the spill impacts and what measures were taken to prevent the spill from occurring again. In addition, there should be a list or some mechanism to convey all changes to the manure

management/nutrient management/mortality management plans implemented during the prior five years and a narrative that describes why those changes were made and whether or not they improved the protection of human health and the environment. In other words, the renewal process should be used to convey to the public/department that the permittee fully understood the requirements during the past five years and has made improvements to the waste management system in a timely manner.

13. 327 IAC 19-8-2 renewal of facilities that are grossly out of compliance – IDEM should have a requirement that addresses those facilities that want their permit renewed but that have a history of repetitive non-compliance and/or are currently grossly out of compliance. There should also be some language that addresses those facilities that are in bankruptcy and seriously non-compliant.

14. 327 IAC 19-8-4 Denials – The language in section (4)(a) is not clear; is the intent of the language to deny a permit application after failure to address at least two deficiency letters?

15. 327 IAC 19-8-6 Transferability – There must be a public notice and due process mechanism in the permit transfer rule so that adjacent landowners and concerned public can comment on the viability of the new owner/permittee to operate the facility and to insure that the good character provision is tested. Even though the language requires acknowledgement of the responsibility of the ongoing violations, my concern is that non-compliance and violation may have separate legal meanings. If IDEM has not issued a Notice of Violation, but the current permittee is still out of compliance – how does this language apply? Maybe the wording could be improved so that the new owner understands it is responsible for all non-compliance, including known violations.

16. 327 IAC 19-10-1 (b)(3)(I) list of monitoring parameters – Should include total dissolved solids (TDS) and total Kjeldahl nitrogen (TKN). The TDS value is important when considering the negative impacts of salty wastewater land applied on crops and their expected yields dependent on salt tolerance. The TKN value is typically used in plant available nitrogen (PAN) calculations.

17. 327 IAC 19-10-1 (c) statistical significance – Considering the number of samples will be less than recognized under normal distribution, is IDEM asking the permittee to perform non-parametric statistical analysis; and if so, how many permittees are sufficiently trained in statistics to make a judgment on a statistical increase? I applaud the department's requirement for statistical analysis, but I believe there will be a credibility problem for most CAFO operators in this regard. Assuming the permittee will hire someone to perform the statistical analysis – that person should be identified with respect to qualifications and a narrative should be provided that describes what statistical methods were used, why they were used, and the reliability of the findings.

18. 327 IAC 19-11-1 and 19-11-2 regarding SWP3 – The stormwater pollution prevention plan should include all provisions employed at land application sites to reduce and minimize contaminated stormwater runoff during storage/staging of manure

and during the land application of manure/wastewater. Prior permit applications have allowed discharge of silage leachate along graveled areas that can contribute to contaminated stormwater – is this practice prohibited by the rule? Prior permits have included discharge from perimeter drain tiles onto the surface. Where does the rule address the discharge of contaminated groundwater to the surface from lagoon perimeter tiles?

19. 327 IAC 19-11-2 (6) (B) monitoring plan parameters – The parameters should include Total Kjeldahl Nitrogen (TKN) and nitrate-nitrogen. The inclusion of ammonia-nitrogen (NH4+) is volatile and would not represent all forms of nitrogen (eg., silage leachate nitrogen is in the form of nitrates). Which BOD is being required – carbonaceous or ultimate or both? It might be prudent to include field pH as a parameter to help identify contributions from the silage leachate which has a very low pH. Since total organic carbon was included in the groundwater monitoring, it would be important to include TOC in the stormwater runoff monitoring, especially considering the stormwater runoff would most likely contain manure particles and other carbon sources.

20. 327 IAC 19-12-1 site restrictions – In the introductory sentence, the word "must" should be "shall" to emphasize the importance of the site restrictions.

21. 327 IAC 19-12-1 (a)(3) one hundred year flood plain – IDEM should understand that many counties have zoning restrictions in flood zones that measure the separation distance from the lowest floor. In the case of CAFOs, that would be the bottom of the pits under the slatted floors. This rule language allows construction below flood level if the access doors (to the barns, presumably) are two feet above the flood level. Several CAFOs have been proposed to IDEM using this exact reconciliation (ie., that the barn doors are above the flood level) yet completely ignoring the negative impacts to the pit wall integrity such flooded conditions would impose. This sentence continues with the statement: "and structurally sound without lowering the seasonal water table". The seasonal water table is not the same as the flooded water table, right? During a flood, the entire soil column would be saturated and there would be a significant threat of structural integrity. Best to not allow construction of below ground manure storage in those flood zones, period.

22. 327 IAC 19-12-1 (b)(3) earthen storage near Karst – the use of earthen storage should be prohibited in karst terrain. A distance of 10 feet is not going to prevent seepage from entering karst bedrock for any significant amount of time. Once the pollution enters the karst bedrock – the mobility is swift and unstoppable. Only aboveground tank storage with secondary spill containment should be allowed in karst areas.

23. 327 IAC 19-12-2 setbacks – IDEM is taking baby steps towards increasing setbacks of manure storage. However, the distances proposed are glaringly small and do not provide protection to adjacent landowners property and health. Setbacks to public water supplies should be at least one mile, not a mere 1000 feet. Setbacks to residential buildings should be a minimum of 1250 feet and should increase as the size

of the CAFO increases with setbacks of quarter mile increments per every 1000 animal units. If IDEM does not increase setbacks in this rule-making, they are missing the best opportunity to show that the adjacent landowners are protected.

At the very least, the proposed setbacks must be under the control of the permittee and not include any land that is considered off-property to the CAFO. It is insulting to the adjacent landowner to use their property to satisfy a setback to homes and water wells. It is also a takings to imply that the setback only apply to existing structures.
The rule must include setbacks to the facility water well that are as protective as for off-site water wells – it is no different than any other well with respect to pollution entering the wellbore and contaminating the aquifer.

Setbacks for solid manure should also include a sliding scale that increases with number of animal units. The setback for a 1000 head feedlot should be different than that required for a 10,000 head feedlot or even a 100,000 head feedlot. A mere 100 feet from a 100,000 head feedlot is ludicrous.

24. 327 IAC 19-12-3 (a) Storage capacity – net average rainfall must include snowmelt specifically. In previous hearings, the applicants have completely ignored the impact of snowmelt on runoff calculations. Apparently, this component must be specifically required to insure that runoff during snowmelt is considered in the overall storage capacity of the waste management system.

25. 327 IAC 19-12-3 (f) karst terrain restrictions – the rule provides for a two feet separation between the base of the storage facility and the bedrock. There is nothing magical about five feet that will prevent seepage and leakage from entering karst bedrock. The minimum separation distance should be 30 feet for non-karst bedrock and prohibition of belowground storage of waste in karst terrain.

26. 327 IAC 19-12-3 (g) concrete structures – the rule must address the corrosion resistance of the concrete used to build manure structures. This is a problem that can be resolved simply by insisting on a better grade of concrete, generally one that includes Type V cement. The structures should not be made with cinderblock. There must be a mechanism to inspect the surface integrity of the concrete during operation to insure that the expected low permeability of the concrete is maintained throughout the operation of the manure storage facility.

27. 327 IAC 19-12-5 (2)(B) liner materials – PVC should not be allowed as a liner material due to its inability to withstand UV degradation.

28. 327 IAC 19-12-5 (1)(B) liner seepage rate – How will this lower seepage rate be determined during the operation of the facility? The permit language will have to have some sort of seepage measurement and/or calculation that uses actual data – not laboratory data that shows the continued ability of the liner to maintain such a low seepage rate, such as a mass balance on the storage facility.

29. 327 IAC 19-12-5 (4) compaction of liner material – The requirement must include compaction at optimum moisture content to insure that the clay materials are installed correctly and that the compaction reflects the laboratory measurement.

30. 327 IAC 19-12-6 (b) steel tanks – Rule should include a requirement for cathodic protection for steel tanks.

31. 327 IAC 19-13-1(h) field tile outlet monitoring – The tile discharge should be analyzed for TKN and total phosphorus during discharge. Sampling for ammonia-N (NH4+) is only is not a complete representation of the movement of nutrients from the land application field through the field tiles. The parameters tested should include total dissolved solids (TDS), total phosphorus, and fecal coliform in an attempt to distinguish field tile drainage from manure application versus other fertilizer sources. The data should be submitted to IDEM in a monitoring report.

32. 327 IAC 19-13-3 Transport and handling – the sentence needs to be reworded so that it does not imply that dumping/leakage is allowed from vehicles that are moving manure to authorized locations. This may be the appropriate place to require the registration of any manure/wastewaters that enter Indiana for disposal that are not associated with a CAFO/CFO in Indiana.

33. 327 IAC 19-13-4 Emergency spill response plan – Item (a)(1)(C) states "returning spilled manure or waste liquids to an approved waste management system" does not address the problem when that system was the source of the spill (ie., a failure of the containment system) or if it has no capacity to receive returned spilled waste volume and still maintain freeboard.

34. 327 IAC 19-13-2 Digesters and energy recovery systems – this rule should require the other registrations to be acquired before or during the permit review process. The rule directs the applicant to solid waste program only – would there also be an air quality component to some systems?

35. 327 IAC 19-13-4 (a)(4) Equipment and clean-up materials – there should be delineation between that equipment/materials used to address chemical spills versus that equipment used to address manure/wastewater spills. For example, a spill of a case of penicillin requires significant personal protection equipment that is needed to protect the worker from inhalation of penicillin. Completely different equipment would be needed for a spill of feed or milk.

36. 327 IAC 19-14-1 Applicability – This is also a good place to reinforce the need for registration for land application of manure/wastewater that is imported into Indiana.

37. 327 IAC 19-14-2 (a) Required acreage – The second sentence states "This must be documented in the operating record at all times and must be included in all applications, except applications for new CFOs." That does not make sense – why would the initial permit application not include documentation of "a minimum number of

acres for manure application based on manure application rates"? Assuming the rule means to say that documentation in the operating record is required and that the initial permit application obviously would occur before any operating record was established – then the sentence needs to be reworked to insure that it does not inadvertently imply that the initial permit application doesn't need to include minimum acres.

38. 327 IAC 19-14-2 (c) lesser acreage demonstration – should include all calculations used to justify the lesser acreage using the alternative methods and/or innovative technology. This part of the rule should also address whether or not the land application occurs in phosphorus limited watersheds and how that would impact the use of lesser acreage and still be protective of waters of the state.

39. 327 IAC 19-14-3 Manure application rates – This part of the rule does not address the use of computer programs and whether or not various programs will be accepted by IDEM as documentation and how that software is explained by the applicant (ie., data inputs, assumptions, limitations of the output, reliability of the software).

With respect to phosphorus – why allow an additional three years of land application based on nitrogen when the phosphorus levels exceed 200 ppm? Industry claims that the manure is highly valuable and everyone wants it – so there really should not be a need for a phase in of three years. Most manure wastewaters have 4 to 8 times the phosphorus needed for a crop that is fertilized according to the nitrogen content of the manure wastewater. The permittee would need to acquire 4 to 8 times as much land or take the manure to a location that does not have high phosphorus content in the soil.

Soils that do not retain the phosphorus when the manure is land applied according to nitrogen uptake of crops may still contaminate the local shallow groundwater and nearby surface water through infiltration. How will IDEM protect phosphorus limited watersheds if the soils are sandy and thereby do not retain phosphorus (ie., the soil P would be low)?

40. 327 IAC 19-14-6 Manure application setbacks – setbacks do not reflect added protections for waters of the state that are already impaired for nutrients and/or pathogens. Why would the setback to a public water supply be less when the manure is land applied than when it is held in storage (ie., 1000 feet for storage, 500 feet for land application)? What happens if the public water supply well is completely surrounded by land application of manure? The setbacks do not consider aquifer recharge areas for public and private water supply. Why is the setback the same for land that is less than and greater than 6 percent? The greater slope of the land is indicative of erosion and proximity to surface drainage leading up to waters of the state. Why would the setback to public water supply be 500 feet regardless of slope but double if near waters of the state? There needs to be setbacks to residential homes and businesses of at least 500 feet, if not more depending on whether or not the setback must use the adjacent landowner's property.

41. 327 IAC 19-14-6 (a)(3) filter strip for a setback – how will a 35 feet filter strip provide the same protections as a 200 feet setback to waters of the state? Does this sentence imply that land application could occur 35 feet from a drainage inlet if there is a filter strip? Why would that be allowed when 50 feet is hardly protective?

42. 327 IAC 19-14-6 (a)(4) gradient barrier – this provision is casually presented without addressing county zoning issues related to county field tiles, established surface flow paths in crop fields, and the volume of runoff that would be diverted and how that volume would be controlled at the end of the "gradient barrier". What height of barrier would be allowed? Whose land would be flooded from this effort? It seems as if the only reason to allow gradient barriers is to further reduce the minimal setbacks to an absurdly tiny setback of 10 feet.

43. 327 IAC 19-14-6 (e) inspection of field tiles at land application sites – this is a wonderful requirement but there is no indication of how it will be enforced. The provision needs a reporting requirement that includes the personnel that did the inspection, a map of each field showing the location of the field tiles and the point of monitoring, among other activities. The report should be submitted annually to IDEM.

Summary

1. The rule must include greater setbacks to residences and businesses from both the facility itself and the land application of manure. Setbacks should increase in proportion to the size of the facility – larger animal numbers would have larger setbacks.

2. The fee charged for the permit should be significantly higher to help fund inspectors for compliance and enforcement of the new rule.

3. Greater transparency is needed and can be assuaged by requiring the permittee to submit more information to the department so that the public can access operating records, nutrient management plans, mortality management plans, and other such documents.

4. The department needs to incorporate the good character clause intent into the rule such that the applicant understands that a permit application would be denied and/or an existing permit will be revoked. The public spent the better part of four years asking the legislature for this type of protection and IDEM needs to embrace its importance.

5. The reduction in allowable seepage from waste storage is commendable but there must be a reliable mechanism to prove that the permittee has not exceeded that seepage rate throughout the operation of the facility. Calculations should use real data acquired at the facility and not book values.